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Gregg S. Goyins

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HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

NGUYEN, KEVIN M

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/497,021
Filing Date: February 01, 2000
Appellant(s): GOYINS ET AL.

MAILED

DEC 22 2006

Technology Center 2600

GOYINS ET AL.
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10/03/2006 appealing from the Office action mailed 04/07/2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of related appeals, interferences, and judicial proceedings which affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

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4723835	FRANKLIN	2-1998
4692779	ANDO ET AL.	9-1987
4603946	KATO ET AL.	8-1986
6130731	ANDERSON ET AL.	10-2000
3963310	GIALLORENZI ET AL.	6-1976

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Objections

1. Appellant is advised that should claim 1 be found allowable, claim 20 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 11, 20 and 24-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Kahn et al (US 4,799,770) hereinafter Kahn.

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4. As to claims 1 and 20, Kahn teaches a switchable polarizer for optical projection displays (a projection system 10, see Fig. 1), said comprising

a first electrode having a first set of contacts, and a second electrode having a second set of contacts [six mutually parallel busbars 35-1,...,35-6 are bonded to the reflective layer 26 to serve as electrodes as shown in Fig. 3. The busbars 35-1 and 35-4 are on the same edge of the liquid crystal cell 20 and respectively in contact with the regions 24-1 and 24-3, see col. 5, lines 44-51 for further details of the explanation];

a layer of liquid crystal material positioned between the first and second electrodes [liquid crystal molecules 20, see Fig. 5, see col. 6, lines 38-50 for further details of the explanation];

wherein the first electrode conducts current between said first set of contacts to heat the polarizer, and wherein the second electrode conducts current between said second set of contacts to heat the polarizer [see col. 5, line 54 –col. 6, line 8 for further details of the explanation].

5. As to claim 11, Kahn teaches wherein the polarizer is a polarizer serves as a polarization compensator [an optical system 12 serves to split its output into four beams a, b, c and d, each directed onto one particular region of a reflective liquid crystal cell 14...., see col. 3, lines 48-61] is an optical projection display [a projection system 10, see Fig. 1, col. 3, lines 48-52].

6. Claim 24 shares similar limitations to those included in claim 1 and therefore the rationale of rejection will be the same. Claim 24 has the added limitation driving said set of electrodes to establish an electric field across said layer of liquid crystal to control

polarization states of said liquid crystal. Kahn further teaches a blank bright screen is produced by passing a current pulse in one of the conductive layers adjacent to the liquid crystal layer to heat the liquid crystal molecules and simultaneously or subsequently applying an electric field across the liquid crystal layer as the liquid crystal molecules cool down, see col. 4, line 65 through col. 5, line 3.

7. As to claim 25, Kahn further teaches wherein said driving said set of electrodes to cause current to flow and said driving said set of electrodes to establish an electric field occur simultaneously [a current pulse in one of the conductive layers adjacent to the liquid crystal layer to heat the liquid crystal molecules and simultaneously or subsequently applying an electric field across the liquid crystal layer, see col. 4, line 65 through col. 5, line 3].

8. As to claim 26, Kahn further teaches wherein said driving said set of electrodes to cause current to flow and said driving said set of electrodes to establish an electric field occur in different operational modes [a current pulse in one of the conductive layers adjacent to the liquid crystal layer to heat the liquid crystal molecules and simultaneously or subsequently applying an electric field across the liquid crystal layer, see col. 4, line 65 through col. 5, line 3. Fig. 3 expressly shows at least one switch for engaging different operational modes by closed/opened switch coupled to said set of electrodes, see claim 27 for "Drawing as a Reference"].

9. As to claim 27, Kahn further discloses wherein said driving said set of electrodes to cause current to flow includes: engaging a plurality of switches coupled to said set of electrodes [It is respectfully submitted that in the case law stated "Drawing as a

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Reference”, “Things clearly shown in reference patent drawing qualify as prior art features, even though unexplained by the specification”. See *In re Mraz*, 173 USPQ 25 (CCPA 1972). “A claimed invention may be anticipated or rendered obvious by a drawing in a reference, whether the drawing disclosure by accidental or intentional. However, a drawing is only available as a reference for what it would teach one skilled in the art who did not have the benefit of appellant’s disclosure”. See *In re Meng*, 181 USPQ 94, 97 (CCPA 1974). “Absent of any written description in the reference specification of quantitative values, arguments based on measurement of a drawing are of little value in proving anticipation of a particular length”. See *In re Wright*, 193 USPQ 332, 335 (CCPA 1977). Thus, Fig. 3 expressly shows closed/opened switches for engaging a plurality of switches coupled to said set of electrodes].

10. As to claim 28, Kahn further discloses wherein said driving said set of electrodes to cause current to flow applies symmetric bipolar signals to drive said first set of electrodes to a positive potential and to drive said second set of electrodes to a negative potential [AC voltage source connected between the front electrodes 35-1 and rear electrodes 35-2 through switch, see Fig. 3. The term “AC potential” or “AC voltage” defines an electric current that reverses direction sinusoidally and that has alternately positive and negative values. See www.dictionary.reference.com, Source: WordNet ® 2.0, © 2003 Princeton University. Thus, positive voltage value and negative voltage value correspond to a first voltage signal and second voltage signal].

11. Claims 13, 14 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Franklin (US 4,723,835)

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12. As to claim 13, Franklin conventionally discloses a method of driving a switchable polarizer in one of two modes, the switchable polarizer having first and second electrodes and a liquid crystal material between the electrodes, wherein during a first driving mode, the electrodes heat the liquid crystal material (a switch 31 is closed, see Fig. 3, col. 4, lines 17-21), while during the second driving mode, the electrodes do not heat the liquid crystal material (the switch 31 is opened, see Fig. 2, col. 4, lines 14-16), said method comprising:

drawing equal currents through the first and second electrodes during the first driving mode [there is DC current flowing in electrodes when the switch 31 is closed, see col. 2, lines 53-56];

applying a first voltage signal to the first electrode and a second voltage signal to the second electrode [the positive voltage value and the negative voltage value correspond to a first voltage signal and second voltage signal, see claim 28 above] during both the first and second driving modes, the first and second voltage signals sustaining the currents drawn through the first and second electrodes during the first driving mode [the switch 31 is closed and DC current flows in electrodes during the first driving mode, referring to FIGS. 2 and 3 illustrate a source of AC potential 30 connected between the front electrodes 13 and rear electrodes 17 through a switch 31. In FIG. 3, the switch 31 is illustrated as closed causing an orientation perpendicular to the electrodes 13 and 17 in the nematic molecules of the liquid crystal fluid 15 where the front electrodes 13 overlap the rear electrodes 17, see col. 4, lines 11-21].

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13. As to claim 14, Franklin conventionally discloses wherein the drawing of currents through the electrodes includes coupling the electrodes to two current sources [The current path provided by the fixed potential connected to the heater is principally through the rear LCD electrodes and therefore the alternating currents across the rear electrode capacitor and the front electrode capacitor flowing through the fixed potential connection are different. This creates an imbalance with respect to the capacitance between the front and the rear LCD electrodes resulting in a net DC current flow, see col. 2, lines 48-56. Thus, there are two current sources, each which connect to each one of electrodes].

14. As to claim 16, Franklin conventionally discloses wherein the applying of the voltage signals to the electrodes includes applying first and second voltage signals that are alternating signals [a source of AC potential 30 connected between the front electrodes 13 and rear electrodes 17 through switch 31, see Figs. 2 and 3, col. 4, lines 11-13. The term "AC potential" or "AC voltage" defines an electric current that reverses direction sinusoidally and that has alternately positive and negative values. See www.dictionary.reference.com, Source: WordNet ® 2.0, © 2003 Princeton University. Thus, positive voltage value and negative voltage value correspond to a first voltage signal and second voltage signal].

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 1-10 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable by Franklin (US 4,723,835) in view of Ando et al (US 4,692,779) hereinafter Ando.

17. As to claims 1 and 20, Franklin discloses a conventional switchable polarizer (see prior art Figs. 2 and 3, a LCD display device), said comprising:

a first electrode having a first set of contacts [a front electrode 12 having a contact 13, see Fig. 2];

a second electrode having a second set of contacts [a rear electrode 16 having a contact 17, see Fig. 2];

a layer of liquid crystal material positioned between the first and second electrodes [liquid crystal molecules 15 therebetween, see Fig. 2];

wherein the first electrode [12] conducts current between said first set of contacts [13] to heat [low temperature/high temperature] the polarizer, and wherein the second electrode [16] conducts current between said second set of contacts [17] to heat the polarizer [see col. 2, lines 17-41 for further details of the operation].

Accordingly, Franklin conventionally discloses teaches all of the claimed limitation except for optical projection displays;

However, Ando conventionally discloses the system explaining with reference to prior art FIG. 1 can only be applied to a display apparatus of an enlarged projection type, see col. 2, lines 41-43;

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to implement the LCD display device as conventionally

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disclosed by Franklin in the optical projection displays of Ando in order to achieve the benefit of intend to display for the optical projection system, because this would provide a large area of display with a memory characteristic at a high density, it requires a large output laser and a long time for writing one picture of image. Moreover, if the area of the liquid crystal device is increased, the writing time is further increased (see Ando, col. 2, lines 36-40).

18. As to claim 2, Franklin conventionally discloses wherein currents passing through the first and second electrodes are constant [an average DC current flows between the heater and the LCD electrodes, see col. 2, lines 17-24. The term "DC current" defines an electric current flowing in one direction only and substantially constant in value--abbreviation *DC*. See www.dictionary.reference.com, *Source: WordNet* ® 2.0, © 2003 *Princeton University*. Thus, the DC current is constant current].

19. As to claim 3, Franklin conventionally discloses wherein the currents passing through the first and second electrodes are constant [an average DC current flows between the heater and the LCD electrodes, see col. 2, lines 17-24. The term "DC current" defines an electric current flowing in one direction only and substantially constant in value--abbreviation *DC*. See www.dictionary.reference.com, *Source: WordNet* ® 2.0, © 2003 *Princeton University*. Thus, the DC current is constant current].

20. As to claim 4, Ando teaches a first and second electrodes apply a uniform electric field across the liquid crystal material [a uniform polarity of charge is imparted to the entirety or a part of the electric charge accepting member whereby the liquid crystal

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is uniformly oriented to its first stable state under a uniform electric field thus formed therethrough, see abstract, lines 5-9].

21. As to claim 5, Franklin conventionally discloses wherein no current passes through the first and second electrodes when the electrodes are not heating the polarizer [the switch is opened, there is no current flow, see FIG. 2, col. 4, lines 5-8].

22. As to claim 6, Franklin conventionally discloses wherein during a non-heating operation of the polarizer, no current passes through either electrode, and the first electrode is at a first potential and the second electrode is at a second potential different from the first potential [the switch is opened, there is no current flow in the electrodes to heat the liquid crystal molecules, see Fig. 2, col. 4, lines 5-8 and col. 4, lines 13-16].

23. As to claim 7, Franklin conventionally discloses wherein the first and second electrodes are transparent electrodes [electrodes 13 and 17 are clear ITO conductive electrodes, see col. 3, lines 31-36].

24. As to claims 8-10, Franklin conventionally discloses wherein the first electrode receives a first voltage signal and the second electrode receives a second voltage signal [a source of AC potential 30 connected between the front electrodes 13 and rear electrodes 17 through switch 31, see Figs. 2 and 3, col. 4, lines 11-13. The term "AC potential" or "AC voltage" defines an electric current that reverses direction sinusoidally and that has alternately positive and negative values. See

www.dictionary.reference.com, Source: *WordNet* ® 2.0, © 2003 Princeton University.

Thus, positive voltage value and negative voltage value correspond to a first voltage signal and second voltage signal].

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25. As to claim 21, Franklin conventionally discloses wherein each of said set of electrodes includes a respective first contact (the positive voltage terminal of the source of AC potential 30 couples to the first electrode, see Fig. 3) and a respective second contact (the negative voltage terminal of the source of AC potential 30 couples to the second electrode, see Fig. 3).

26. As to claim 22, Franklin conventionally discloses a set of switches that selectively enable current to flow through said set of electrodes [the switch is closed, there is current flow in the electrodes to heat the liquid crystal molecules, see Fig. 2, col. 4, lines 17-21].

27. Claims 15 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Franklin in of Ando, and further in view of Kato et al (US 4,603,946) hereinafter Kato.

The combination of Franklin and Ando conventionally discloses all of the claimed limitation, except an output of an amplifier couples to each of electrodes;

However, Kato teaches a related LCD device which includes the operational amplifiers 27 and 29 have their output terminals connected across the electrodes 1a and 2a (see Fig. 4, col. 36-37);

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to implement the operational amplifiers 27 and 29 as taught by Kato in the combination of Franklin and Ando in order to achieve the benefit of intend to drive the LCD device, because one of ordinary skill in the art would be reasonably

apprised of operational amplifier would provide the feedback/gain of the voltage/current values at the output terminal of each of operational amplifiers.

28. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kahn in view of Franklin, and further in view of Kato et al (US 4,603,946) hereinafter Kato.

29. As to claim 17, Kahn discloses a switchable polarizing apparatus for optical projection displays (see Fig. 1), said apparatus comprising:

a first electrode for receiving a first driving signal [a first barbus 35-1, see Fig. 3], and a second electrode for receiving a second driving signal [a second barbus 35-2, see Fig. 3], wherein the first and second driving signals are different [AC voltage source connected between the front electrodes 35-1 and rear electrodes 35-2 through switch, see Fig. 3]. The term "AC potential" or "AC voltage" defines an electric current that reverses direction sinusoidally and that has alternately positive and negative values.

See www.dictionary.reference.com, Source: WordNet ® 2.0, © 2003 Princeton University. Thus, positive voltage value and negative voltage value correspond to a first voltage signal and second voltage signal];

a layer of liquid crystal material positioned between the first and second electrodes [liquid crystal molecules 20, see Fig. 2];

Accordingly, Kahn discloses all of the claimed limitation except for two current sources, each which connects to each of electrodes;

Franklin conventionally discloses wherein the drawing of currents through the electrodes includes coupling the electrodes to two current sources [The current path

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provided by the fixed potential connected to the heater is principally through the rear LCD electrodes and therefore the alternating currents across the rear electrode capacitor and the front electrode capacitor flowing through the fixed potential connection are different. This creates an imbalance with respect to the capacitance between the front and the rear LCD electrodes resulting in a net DC current flow, see col. 2, lines 48-56. Thus, there are two current sources, each which connect to each one of electrodes];

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to implement two current sources as conventionally disclosed by Franklin in the LCD device of Kahn in order to achieve the benefit of intend to drive the LCD device, because one of ordinary skill in the art would be reasonably apprised of this would supply current values for electrodes of LCD device;

The combination of Kahn and Franklin discloses all of the claimed limitation, except for a buffer circuit coupled to the first and second electrodes, said buffer circuit applying the driving voltage signals to the first and second electrodes, said driving signals sustaining the first and second currents through the electrodes;

However, Kato teaches a related LCD device which includes the operational amplifiers 27 and 29 have their output terminals connected across the electrodes 1a and 2a (see Fig. 4, col. 36-37);

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to implement the operational amplifiers as taught by Kato in the of Kahn and Franklin in order to achieve the benefit of intend to drive the LCD device, because one of ordinary skill in the art would be reasonably apprised of operational

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amplifier would provide the feedback/gain of the voltage/current values at the output terminal of each of operational amplifiers.

30. As to claim 18, Kato teaches wherein the buffer circuit includes a programmable gain amplifier for each electrode, each amplifier applying the driving voltage signal to its corresponding electrode [the driver circuit 32 comprises the operational amplifiers 27 and 29 have their output terminals connected across the electrodes 1a and 2a, see Fig. 4, col. 36-40].

31. As to claim 19, Kato teaches wherein each programmable gain amplifier receives a polarization drive signal and a reference voltage signal, the reference voltage signal determining the magnitude of the driving voltage signal applied by the amplifier, and the polarization drive signal determining the polarity of the driving voltage signal applied by the amplifier [The switch 26 has one output terminal (O1) bifurcate to connect one end to the positive input terminal (+) of an operational amplifier 27, and the other end to ground via a resistance 28. Simultaneously, the same switch 26 has another output terminal (O2) bifurcate to connect one end to the positive input terminal (+) of another operational amplifier 29, and the other end to ground via a resistance 30 with its control terminal (C) being connected to an oscillatory circuit 31, see Fig. 4, col. 4, lines 16-25. Thus, at least one positive input terminal (+) of an operational amplifier 27 corresponds to the polarization drive signal, the ground corresponds to the reference voltage signal].

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32. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Franklin in view of Ando, and further in view of Anderson et al (US 6,130,731) hereinafter Anderson.

The combination of Franklin and Ando conventionally discloses all of the claimed limitation, except wherein the polarizer is a polarizing switch of an electronic color switch;

However, Anderson teaches a related LCD device which includes polarizer, see fig. 13C, and color switching device, see col. 6, lines 17-18;

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to implement the polarizer witch color switching device as taught by Anderson in the combination of Franklin and Ando in order to achieve the benefit of intend to make color display for LCD device, because this would provide high resolution more easily obtainable and also allow integration with a polarization modulator for stereoscopic vision (see Anderson, col. 9, lines 55-60).

33. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kahn in view of Anderson et al (US 6,130,731) hereinafter Anderson.

Kahn discloses all of the claimed limitation, except wherein the polarizer is a polarizing switch of an electronic color switch;

However, Anderson teaches a related LCD device which includes polarizer, see fig. 13C, and color switching device, see col. 6, lines 17-18;

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to implement the polarizer witch color switching device as

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taught by Anderson in the LCD of Kahn in order to achieve the benefit of intend to make color display for LCD device, because this would provide high resolution more easily obtainable and also allow integration with a polarization modulator for stereoscopic vision (see Anderson, col. 9, lines 55-60).

34. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Franklin in view of Giallozenri et al (US 3,963310) hereinafter Giallozenri.

35. Claim 24 shares similar limitations to those included in claim 1 and therefore the rationale of rejection will be the same. Claim 24 has the added limitation driving said set of electrodes to establish an electric field across said layer of liquid crystal to control polarization states of said liquid crystal;

However, Giallozenri teaches a related LCD display device which includes an electrical current may be applied by a source 27 controlled by switch 28. Application of an electrical current produces an electric field between the electrodes, see Fig. 6, col. 7, lines 61-47;

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to implement the electrical current produces an electric-field between the electrodes as taught by Giallozenri in the LCD device of Franklin in order to achieve the benefit of intend to drive the LCD device, because this would change the index of refraction and which causes the liquid-crystal molecules 23 to align with the electric field (see Giallozenri, col. 7, lines 47-49).

(10) Response to Argument

A. Ground of Rejection No. 1:

MPEP section 2131 paragraphs II and III explain of each circumstance.

Extra References or Other Evidence Can Be Used to Show Meaning of a Term Used in the Primary Reference. Extrinsic evidence may be used to explain but not expand the meaning of terms and phrases used in the reference relied upon as anticipatory of the claimed subject matter. In re Baxter Travenol Labs., 952 F.2d 388, 21 USPQ2d 1281 (Fed. Cir. 1991).

Extra Reference or Evidence Can Be Used To Show an Inherent Characteristic of the Thing Taught by the Primary Reference "To serve as an anticipation when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence. Such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Continental Can Co. USA v. Monsanto Co., 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991). Note that as long as there is evidence of record establishing inherency, failure of those skilled in the art to contemporaneously recognize an inherent property, function or ingredient of a prior art reference does not preclude a finding of anticipation. Atlas Powder Co. v. IRECO, Inc., 190 F.3d 1342, 1349, 51 USPQ2d 1943, 1948 (Fed. Cir. 1999). This finding of inherency was not defeated by the fact that one of the references taught away from air entrapment or purposeful aeration.). See also In re King, 801 F.2d 1324, 1327, 231 USPQ 136, 139 (Fed. Cir. 1986); Titanium Metals Corp. v. Banner, 778 F.2d 775, 782, 227 USPQ 773, 778 (Fed. Cir. 1985). See MPEP § 2112 - § 2112.02

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for case law on inherency. Also note that the critical date of extrinsic evidence showing a universal fact need not antedate the filing date. See MPEP §2124.

Since only alleged distinction between appellant's claims and reference is recited in functional language, it is incumbent upon appellants, when challenged, to show that device disclosed by reference does not actually possess such characteristics. See *In re Ludtke*, 169 USPQ 563 (CCPA) 1971). The burden on appellant to rebut an inherency rejection applied to product and process claims. See *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

Appellant argues with respect to claims 1, 20 and 24 that Kahn does not teach a switchable polarizer that has a layer of liquid crystal material positioned between the first and second electrode. In response, examiner disagrees. As stated *supra* with respect to claims 1, 20, and 24, Kahn teaches a liquid crystal molecules 20-1 positioned between the first electrode 35-1 and second electrode 35-2 as shown in Fig. 3 that performs the functionality of a switchable polarizer, which the molecules are twisted by electrostatic forces by applying a voltage. This changes the twist of the light passing through the molecules, and allows varying degrees of light to pass (or not to pass) through the polarizing filters. Before applying an electrical charge, the liquid crystal molecules are in a relaxed state. Charges on the molecules cause these molecules to align themselves in a helical structure, or twist (the "crystal"). In some LCDs, the electrode may have a chemical surface that seeds the crystal, so it crystallizes at the needed angle. Light passing through one filter is rotated as it passes through the liquid crystal, allowing it to pass through the second polarized filter. A small amount of light is

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absorbed by the polarizing filters, but otherwise the entire assembly is transparent.

When an electrical charge is applied to the electrodes, the molecules of the liquid crystal align themselves parallel to the electric field, thus limiting the rotation of entering light. If the liquid crystals are completely untwisted, light passing through them will be polarized perpendicular to the second filter, and thus be completely blocked. The pixel will appear unlit. By controlling the twist of the liquid crystals in each pixel, light can be allowed to pass through in varying amounts, correspondingly illuminating the pixel. Thus, the switchable polarizer having a layer of liquid crystal material therebetween the pair of electrodes, see current application of pages 1-3 in the specification for further details of reviewing. Furthermore, examiner respectfully submits that appellant has argued the well-known switchable polarizer for LCD device like the same in the background of invention.

In response to appellant's arguments, the recitation "a switchable polarizer" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Appellant argues with respect to dependent claim 11. In response, the examiner respectfully disagrees. As stated supra, Kahn teaches wherein the polarizer is a

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polarizer serves as a polarization compensator [an optical system 12 serves to split its output into four beams a, b, c and d, each directed onto one particular region of a reflective liquid crystal cell 14..., see col. 3, lines 48-61] is an optical projection display [a projection system 10, see Fig. 1, col. 3, lines 48-52].

With respect to dependent claims 25-28, appellant argues the dependent claims with the only emphasis of the recitation in the independent claim 24. In response, the examiner respectfully submits that the applicant's argument based on the dependent claims is not persuasive; therefore, the response is mooted in ground of rejection of amended independent claims as explained in greater details above.

B. Ground of rejection No. 2:

Appellant argues with respect to claim 13 that Franklin does not teach "applying a first voltage signal to the first electrode and a second voltage signal to the second electrode during both the first and second driving modes." In response, examiner respectfully disagrees because Franklin conventionally discloses that features recited in claim 13. See col. 4, lines 41-68, Franklin conventionally discloses AC voltage maintaining a low potential when applying a voltage to front and rear LCD electrodes, the liquid crystal molecules (15) is not perpendicular or the segment is turned off. In the meantime, an increased potential of the RMS voltage, the liquid crystal molecules (15) is reorient themselves to be perpendicular or the segment is turned on. Therefore, the low potential and the increased potential correspond to the first voltage signal, and the second voltage signal, respectively. The segment is turned on and off corresponding to during both the first and second driving modes as recited claim 13. It is noted that

Franklin discloses the conventional or the well-known switchable polarizer for LCD device like the same in the background of invention, see application of pages 1-3 in the specification for further details of reviewing.

Appellant argues that dependent claims 14 and 16 with the emphasis recitation of the limitation of claim 13. In response, the examiner respectfully submits that the appellant argues only base on the independent claim 13; therefore, the arguments are not moot. As alleged in greater details above with respect to independent claim 13, the conventional teaching of Franklin meets all that limitation.

C. Ground of Rejection No. 3:

Appellant argues that "the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combinations". In response, examiner respectfully disagrees because the prior art can be modified or combined to reject claims as prima facie obvious as long as there is a reasonable expectation of success. In *re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986), see MPEP § 2143.02. The reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by appellant. In *re Linter*, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972) (discussed below); In *re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1990), cert. denied, 500 U.S. 904 (1991) (discussed below). Although *Ex parte Levengood*, 28 USPQ2d 1300, 1302 (Bd. Pat. App. & Inter. 1993) states that obviousness cannot be established by

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combining references “without also providing evidence of the motivating force which would impel one skilled in the art to do what the patent appellant has done” (emphasis added), reading the quotation in context it is clear that while there must be motivation to make the claimed invention, there is no requirement that the prior art provide the same reason as the appellant to make the claimed invention, see MPEP § 2144.

In response to appellant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Appellant argues with respect to claims 1, 20 and 24 recited “wherein the first electrode conducts current between said first set of contacts to heat the polarizer, and wherein the second electrode conducts current between said second set of contacts to heat the polarizer,” see remarks at page 12. In response, examiner respectfully disagrees. As stated *supra* with respect to claims 1, 20 and 24, it is noted that a current claimed invention of claims 1, 20, and 24 are equivalent to the scope of conventional invention as disclosed by Franklin in the background of his invention. Therefore, the current claimed invention is inherent from the well known in the LCD art, and there is no improvement.

Appellant argues that dependent claims 2-10 and 21 and with the emphasis recitation of the limitation of claims 1 and 20. In response, the examiner respectfully submits that the rejection obviously bases on the independent claims, not inherently

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base on the independent claims. As alleged in greater details above with respect to independent claims 1 and 20, the conventional teaching of Franklin obviously meets all that limitation.

D. Ground of Rejection No. 4:

Appellant argues that dependent claims 15 and 23 with the emphasis recitation of the limitation of claims 13 and 20. In response, the examiner respectfully submits that the rejection obviously bases on the independent claims, not inherently base on the independent claims. As alleged in greater details above with respect to independent claims 13 and 20, the conventional teaching of Franklin obviously meets all that limitation.

E. Ground of Rejection No. 5:

Appellant argues with respect to claim 17 "Franklin at Col. 5, lines 1-23. This is because the current can damage and LCD device through electroplating...In this case, the proposed modification would ruin the LCD device of Kahn by causing electroplating." In response, examiner respectfully disagrees. As stated *infra*, Franklin discloses "this cause the fluid to lose alignment in the area of the damaged alignment coating and consequently the light is not twisted 90 degrees at this location, see col. 5, lines 11-14, Franklin's invention did not deal to ruin the LCD of Kahn. The proposed modification two current sources as disclosed by Franklin to drive the LCD Kahn. As stated *supra* [see paragraph 30], the current path flows to the rear LCD electrode corresponding to the first current source as recited claim 17, and the current path flows to the front LCD electrode corresponding the second current source as recited claim 17.

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Appellant argues that dependent claims 18 and 19 with the emphasis recitation of the limitation of claim 17. In response, the examiner respectfully submits that the rejection obviously bases on the independent claims, not inherently base on the independent claim. As alleged in greater details above with respect to independent claim 17, the conventional teaching of Franklin obviously meets all that limitation.

F. Ground of Rejection No. 6 and 7:

Appellant argues that dependent claim 12 with the emphasis recitation of the limitation of claim 1. In response, the examiner respectfully submits that the rejection obviously bases on the independent claims, not inherently base on the independent claim. As alleged in greater details above with respect to independent claim 1, the conventional teaching of Franklin obviously meets all that limitation.

G. Ground of Rejection No. 8:

36. Appellant argues with respect to claim 24. In response, examiner respectfully disagrees. As stated *supra* with respect to claim 24, appellant argues the feature is the same the feature of claim 1 that are recited, see rejection of paragraph 34 above. Thus, the response is moot. It is noted that a current claimed invention of claims 1, 20, and 24 are equivalent to the scope of conventional invention as disclosed by Franklin in the background of his invention. Therefore, the current claimed invention is inherent from the well known in the LCD art, and there is no improvement.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Kevin M. Nguyen

Patent Examiner

Conferees:

Richard Hjerpe



MARK ZIMMERMAN



RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600